

REMARKS

Upon entry of this amendment, claims 1-13 are all the claims pending in the application. Non-elected claims 14-20 are canceled by this amendment.

I. Objections to the Specification

The Examiner has objected to the specification for the reasons set forth on page 2 of the Office Action. Applicant submits herewith a substitute specification and abstract which address the Examiner's objections. In particular, Applicant notes that the phrase "insulating substrate" in the claims has been replaced with the term --substrate--. In addition, Applicant notes that the substitute specification includes various editorial amendments that have been made for grammatical and general readability purposes. No new matter has been added. Also enclosed is marked-up copy of the original specification and abstract showing the changes incorporated into the substitute specification and abstract.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the objection to the specification.

II. Claim Rejections under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claims 4-7 under 35 U.S.C. § 112, second paragraph as being indefinite. Applicant has amended claims 4-7 in a manner to overcome this rejection. Accordingly, Applicants respectfully request that the rejection be reconsidered and withdrawn.

III. Claim Rejections under 35 U.S.C. § 103(a)

A. The Examiner has rejected claims 1, 4, 8-10, 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Fox et al. (U.S. 2002/0074601) in view of the Applicant's Admitted Prior Art or in view of Kanaya et al. (U.S. 6,611,014).

Claim 1, as amended, recites the feature of heat treating a ferroelectric film in an oxidizing atmosphere under a condition of covering a contact film with a lower electrode. Applicant respectfully submits that the combination of the cited prior art fails to teach or suggest at least this feature of claim 1.

Fox discloses a method for fabricating ferroelectric capacitor elements of an integrated circuit (see Abstract). In particular, a ferroelectric capacitor is grown on top of a thermal oxide layer 100 (see paragraph [0038]). As shown in Fig. 2 of Fox, an adhesion layer 102 is formed on the thermal oxide layer 100, and a bottom electrode layer 104 is formed on the adhesion layer 102.

Next, Fox discloses that one or more layers of lanthanum doped PZT ferroelectric dielectric is deposited on the bottom electrode layer 104 (see Fig. 1 and paragraph [0040]). The PZT is next annealed by rapid thermal annealing in a low vacuum, or largely inert gas atmosphere, thereby having less oxygen than ambient air (see paragraph [0041]).

In the Office Action, the Examiner asserts that the above-noted annealing step corresponds to heat treating a ferroelectric film under a condition where a contact film is covered with a lower electrode. However, as discussed above, claim 1 has been amended to recite the feature of heat treating the ferroelectric film in an oxidizing atmosphere under a condition of covering the contact film with the lower electrode.

Thus, as noted above, because Fox explicitly discloses that the annealing of the PZT takes place in a low vacuum, or largely inert gas atmosphere, it is clear that Fox does not disclose, suggest or in any way render obvious heat treating a ferroelectric film in an oxidizing atmosphere, as recited in amended claim 1. Moreover, Applicant respectfully submits that each of the Admitted Prior Art and Kanaya fails to cure this deficiency of Fox.

In view of the foregoing, Applicant respectfully submits that the cited prior art fails to disclose, suggest or otherwise render obvious all of the features recited in claim 1. Accordingly, Applicant submits that claim 1 is patentable over the cited prior art, an indication of which is kindly requested.

Claims 4, 8-10, 12 and 13 depend from claim 1 and are therefore considered patentable at least by virtue of their dependency.

B. The Examiner has rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over Fox et al. in view of Applicant's Admitted Prior Art; or over Fox et al. in view of Kanaya et al. and further in view of Jung et al. (JP 2001-044377).

Claim 2 depends from claim 1. Applicant respectfully submits that Jung fails to cure the deficiencies of Fox, Applicant's Admitted Prior Art, and Kanaya, as discussed above, with respect to claim 1. Accordingly, Applicant respectfully submits that claim 2 is patentable over the cited prior art, an indication of which is kindly requested.

C. The Examiner has rejected claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Fox et al. in view of Applicant's Admitted Prior Art.

Claim 3 depends from claim 1. As noted above, Applicant respectfully submits that Fox and Applicant's Admitted Prior Art fails to disclose, suggest or otherwise render obvious all of the features of claim 1. Accordingly, Applicant respectfully submits that claim 3 is patentable over the cited prior art, an indication of which is kindly requested.

D. The Examiner has rejected claim 11 under 35 U.S.C. § 103(a) as being unpatentable over Fox et al. in view of Applicant's Admitted Prior Art; or over Fox et al. in view of Kanaya et al. and further in view of Nagano et al. (U.S. 2002/0195633).

Claim 11 depends from claim 1. Applicant respectfully submits that Nagano fails to cure the deficiencies of Fox, Applicant's Admitted Prior Art, and Kanaya, as discussed above, with respect to claim 1. Accordingly, Applicant respectfully submits that claim 11 is patentable over the cited prior art, an indication of which is kindly requested.

IV. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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May 31, 2005